



**4th World Congress on Biosphere
Reserves (SACAM side event)**

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National Environment Policy (NEP) of Government of India

- The NEP intends to be a guide to action in the regulatory reform, programmes and projects of environmental conservation by Central, State and Local Governments.
- The dominant theme is that conservation of environmental resources is necessary to secure livelihoods and well-being of all.
- The most secure basis for conservation is to ensure that people dependent on particular resources obtain better livelihoods from the fact of conservation, than from degradation of the resource.

Initiatives by MoEF for Harmonizing Community Livelihood with Conservation

MoEF implements various programmes/ schemes and projects. They include :

- Forest Conservation
- Natural Resource Conservation and Management
- Conservation of Rivers, Lakes & Wetlands
- Eco-Sensitive Zones
- Sustainable Development and Climate Change
- Research, Education and Awareness



Biosphere Reserves

- BR to be an embodiment of Sustainable Development on the concept of social progress, economic development & environmental protection through (conservation, development and logistic support) which are complementing and mutually reinforcing.
- Prioritizing the activities based on local resources for local communities.
- Enhanced awareness and promotion of eco-tourism by inclusion in the world network of UNESCO.

Biosphere Reserve Scheme: Initiative

- 1979 : Potential sites (13) for designation as Biosphere Reserves identified by National Man and Biosphere Committee.
- 1983: Committee of Secretaries approved establishment of Biosphere Reserves in India for conservation of critical eco-systems.
- 1986 : BR Scheme initiated to facilitate conservation of entire eco-system and ensure its perpetuation and unhindered evaluation of the living resources, with the designation of Nilgiri as 1st BR from India.
- Till date, 18 BRs have been designated covering 8 Bio-geographic Zones and 9 of the 18 BRs included in the World Network of Biosphere Reserves of UNESCO (10th site conditional inclusion).

Biosphere Reserve Scheme

- The designated BRs are:
 - Eco-system oriented self contained units of land/water/flora & fauna.
 - intended to conserve the representative ecosystem type of the country.
 - Designated with a view to strengthen the scientific basis for sustainable use & conservation of Natural resources
 - The thrust of BR Scheme is to deal with reconciling the conservation of biodiversity, economic and social development through alternate livelihood provisions and maintenance of cultural values.
- Special focus on people and the nature and their co-existence while respecting each other's needs.
- Provides special approaches for the ethnic and tribal population.

Biosphere Reserves-Governance

The Indian National Man and Biosphere (MAB) Committee –

- Advise on policy and program formulation for Biosphere Reserves (BRs) in line with MAB objectives (Potential BR sites & WNBR).
- Lay down guidelines on management action plans for BRs.
- Review the progress of program implementation in BRs.

State Level Steering Committee (SLSC)

Examines Management Action Plans (MAP) and makes recommendations to MoEF&CC for financial assistance.

Local Level Committee (LLC)

Coordinates activities of various line Departments and recommends suitable interventions for incorporation in the MAP.

Note: As per guidelines the SLSC & LLC are responsible to recommend elements of management after avoiding duplication with other ongoing schemes in BR area like NP, Wetlands, Mangroves etc.,

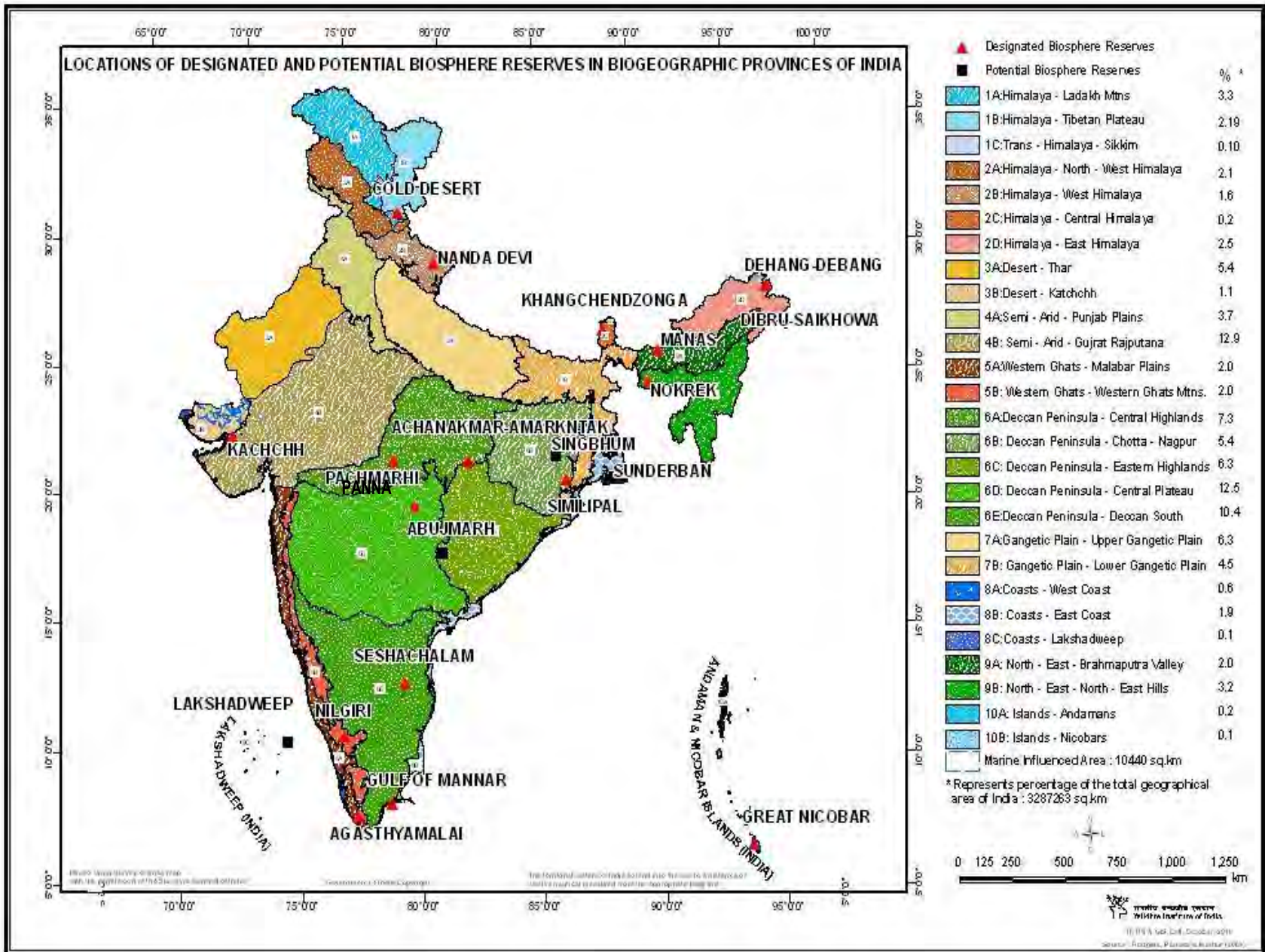


Designated BRs in India

S.No.	Name of BR	Total Geo. Area(Km ²) (Biogeographic Zones)	Representative State/s
1.	Nilgiri**	5520 (Western Ghats)	T.N., Kerala & Karnataka
2.	Gulf of Mannar**	10500 (Coasts)	Tamilnadu
3.	Sunderbans**	9630 (Coasts)	West Bengal
4.	Nanda Devi**	5860.69 (Himalaya)	Uttarakhand
5.	Nokrek**	820 (North East)	Meghalaya
6.	Pachmarhi**	4981.72 (Deccan Peninsula)	M.P.
7.	Similipal**	4374 (Deccan Peninsula)	Orissa
8.	Achanakmar-Amarkantak**	3835.51 (Deccan Penins.)	M.P. & Chattisgarh
9.	Great Nicobar**	1038.7 (Islands)	A&N Islands
10.	Kangchendzonga*	2931.12 (Himalaya)	Sikkim
11.	Manas*	2837 (North East)	Assam
12.	Agasthyamali*	3500.36 (Western Ghats)	T.N. & Kerala
13.	Dibru-Saikhowa	765 (North East)	Assam
14.	Dehang –Debang	5111.5 (Himalaya)	Arunachal Pradesh
15.	Kuchchh	12454 (Semi-Arid)	Gujarat
16.	Cold Desert	7770 (Trans Himalays)	Himachal Pradesh
17.	Seshachalam	4755.997 (Deccan-Peninsula)	Andhra Pradesh
18.	Panna	2998.98 (Decan-Peninsula)	Madhya Pradesh
	Total	89530.427	

** Sites in India under UNESCO World Network of BRs out of 651 sites in 120 countries

* Sites under consideration by UNESCO for World Network of BRs



Components of Management Action Plan

- As per the guidelines, assistance provided primarily for target conservation and livelihood needs. These are :
 - Core Activities: Conservation approaches, community development, sustainable livelihood etc.
 - Ancillary Activities: Monitoring, awareness programmes
 - Site specific activities – e.g.

Management Components Assisted

- Habitat improvement
 - Rehabilitation of landscapes of threatened sps. & ecosystems**
 - Conservation of Critical habitats in buffer zones**
 - Maintenance and protection of Corridor areas**
- Eco-development
 - Value addition & income generating activities**
(apiculture, sericulture, aquaculture, animal husbandry, cottage industries etc.)
- Socio-economic upliftment of local communities
 - Skill strengthening and capacity building activities,**
Drinking water, Health camps etc.,
- Development of Eco-tourism, Communication system and networking, Education, Training and Awareness

Livelihood Components in management of BRs

Local community participation in conservation and utilization of resources in a sustainable way are promoted so that their economic well-being is secured. The livelihood components assisted include :

- Promoting water conservation, developing water storage capacities by check dams, percolation tanks etc.
- Promoting animal husbandry, fodder crop cultivation to reduce anthropogenic pressure on natural resources.
- Providing energy alternatives to local communities to reduce pressure on timber.
- Appropriate livelihoods to residents in the corridor areas.
- Value addition activities.
- Development of eco-tourism as livelihood alternative.

Regulatory Obligations

- The Wildlife (Protection) Act, 1972
- The Environment Protection Act, 1986 (w.r.t. CRZ Notification, 2011 and Wetlands (Conservation and Management Rules, 2010) in preparation of cMAP.
- The Forest (Conservation) Act, 1980
- The Biological Diversity Act, 2002
- ESZ?

Biodiversity Act, 2002

- Enacted with the objective of conservation of biological resources, sustainable use and fair & equitable sharing of benefits arising out of use of these resources.
- Empowers GOI in consultation with SGs to notify species threatened or on verge of extinction and their rehabilitation.
- Envisages Constitution and Application of Local Biodiversity Fund respectively.
- Provides for the Fund so generated to be used for conservation and promotion of biodiversity by the concerned local body for the benefit of the community in consistence with biodiversity conservation.

Protected Areas & Eco-sensitive Zones

- 730 Protected Areas including 103 National Parks, 535 WL Sanctuaries, 26 community Reserves & 66 Conservation Reserves in different bio-geographic regions to protect the threatened flora & fauna and their habitats.
- NWAP Recommendation: Identified areas around PAs to be declared 'Ecologically Fragile'
- Proposals for 107 land areas around PAs in process of designation as Eco-sensitive Zones under EAct, 1986
Draft Notifications : 79 ; Final Notifications: 28

Eco-sensitive Zones

- Lands falling within 10 Km (site specific) of the boundary of PAs, NPs & Sanctuaries.
- SGs to prepare zonal master plans within 2 years.
- Master Plans to provide for restoration & conservation, regulate development, prevent land use changes & industry establishment, promote eco-tourism, pollution control etc.
- Notification lists activities to be Prohibited, regulated & promoted.
- Monitoring Committee under Dist. Collector to file complaint for action under section 19 of EPAAct, 1986.

Lead Institutions

S.No.	Name of the Institutions	BR(s) Covered
1	GBPIHED, Almora	All Himalayan BRs (Khangchendzonga, Dehang-Debang, Dibru-Saikhowa, Manas, Nanda Devi, Cold Desert)
2	TBGRI, Tiruanantpuram	Nilgiri, Gulf of Mannar, Agasthyamalai
3	EPCO, Bhopal (Also BR Manager)	Pachmarhi, AABR (MP part) and Panna
4	BSI, Kolkata	Sunderban and Nokrek
5	RPRC, Bhubaneswar	Similipal
6	GEER, Gandhi nagar	Kachchh
7	ZSI, Kolkata	Great Nicobar
8	TFRI, Jabalpur	AABR (Chattisgarh part)
9.	EPTRI, Hyderabad	Seshachalam

Functions of Lead Institutions

- Assisting the implementing agencies -
 - a) in survey;
 - b) preparation of cMAP; and
 - c) subsequently monitoring the implementation of cMAP for submitting monitoring report.

Financial outlays & Expenditure

	Outlay	Expend
	(Rs. In crore)	
X Plan :	40.00	35.85
XI Plan :	60.00	53.27
XII Plan :	75.00	32.00

(during 2012-13 to 2015-16)

Potential sites

S.N.	Name of site	Bio-geographic Zone	State/UT
1	Namdapha	Himalaya	Arunachal Pradesh
2	Thar Desert	Desert	Rajasthan
3	Kaziranga	North-East	Assam
4	North Andaman	Islands	A & N Islands
5	Abujhmarh	Deccan Peninsula	Chattisgarh
6	Lakshdeep Islands	Islands	Lakshdweep Islands
7	Singbhum	Deccan Peninsula	Jharkhand
8	Tawang and West Kamang	Himalaya	Arunachal Pradesh
9.	Chambal River and its tributaries	Semi-arid zone	Rajasthan

Designation of new sites as BRs.

1. Rajiv Gandhi Biosphere Reserve in Rajasthan

- 10 districts in the Catchment of Chambal River (National Chambal Sanctuary) and its tributaries.
- A tripartite committee of 3 stakeholder States and Forest Deptt. involved in zonation for finalizing BR. As per expert comments, proposal not conforming to guidelines.

2. Designation of Desert National Park (spread in Jaisalmer and Barmer districts) and its adjoining areas as Thar Desert BR.

- Govt. of Rajasthan to identify adjoining areas of Desert Park for demarcation of the site into 3 inter-related zones, i.e. core, buffer and transition

Periodic Review Report

- BRs that completed 10 years of inclusion in WNBR – Nilgiri, Sundarbans, Gulf of Mannar & Nanda Devi.
- Review Reports of Nilgiri & Sunderbans accepted by MAB-ICC
- Review report of GoM considered. To explore opportunities for a transboundary BR initiative in the region. However, increasing the core and buffer areas being uninhabited, is an issue.
- Nanda Devi Report as prepared by State Govt. of Uttarakhand submitted to MAB Sectt.(Jan, 2016).

Preparation of Nomination Form (for inclusion in WNBR)

- Kanchgchendzonga BR, Sikkim – Revised document awaited from State.
- Manas BR, Assam : Core area disturbed – Document awaited from State.
- Agasthyamalai BR – Conditional approval accorded by MAB ICC, UNESCO in its 27th meeting. Clarifications submitted to MAB Sectt. for declaring site under WNBR.

Comprehensive Management Action Plans for Conservation and Development

- Preferably co-terminus with Plan along with annual requirement of funds.
- All conservation activities, through involvement of local communities (EDC, SHG, JFMC, VSM etc.), which include the following:-
 - i) Activities with assistance from concerned State Departments, bilateral / multilateral agencies to be taken into account and synergized with remaining activities to be funded under BR Scheme.
 - ii) State Government / implementing agencies to ensure no duplication and overlap.
 - iii) Activity-wise / component-wise timelines have to be clearly defined.
 - iv) Identified lead institute to be involved in preparation of cMAP
 - v) A clear institutional mechanism indicating coordinating and monitoring agencies.

Issues to address

- Potential site for BR to be covered on all sides by buffer & transition zones???
- Secure eco-system services through effective management strategy
- Reducing the current rate of biodiversity loss.
- Commitments to mitigating and adapting to climate change be kept in view.
- BRs to act as learning sites for Sustainable Development.
- MAPs to be closely linked to Forest Conservation Programs, Eco-sensitive Zones to derive maximum benefits.

Way Forward

- cMAPs
- Conservation to be largely through local communities.
- BRs a nature capital for Eco-tourism: Rationalization of Eco-tourism through strict conditions
- Revenue generation to offset the cost of MAP in a phased manner for self-sustaining
- A dedicated & interactive website connecting each of the BR with centre (MoEF&CC).
- Identify more potential BR sites in consonance with ESZs being notified.

Eco development activities in and around the Sundarbans

In order to develop trust between local communities & Forest Department and also to reduce the dependance of local communities on natural resource, various eco developmental activities are executed in the Joint Forest Management Committes of Sundarban Biosphere Reserve.



Brick path



Jetties

Eco development activities in and around Sundarbans



Jetties



Canal



Mangrove Plantation



Afforestation done on Kurusadai Island, GoMBR



Coral infested by Kappaphycus alvarezii



Coral restoration work, GoMBR



Sea-Grass conservation worksalvarezii, GoMBR



Jasmine cultivation being promoted as alternate livelihood, GoMBR



Alternate Livelihood for local communities through SHG, GoMBR



Interaction with one of the SHG , GoMBR



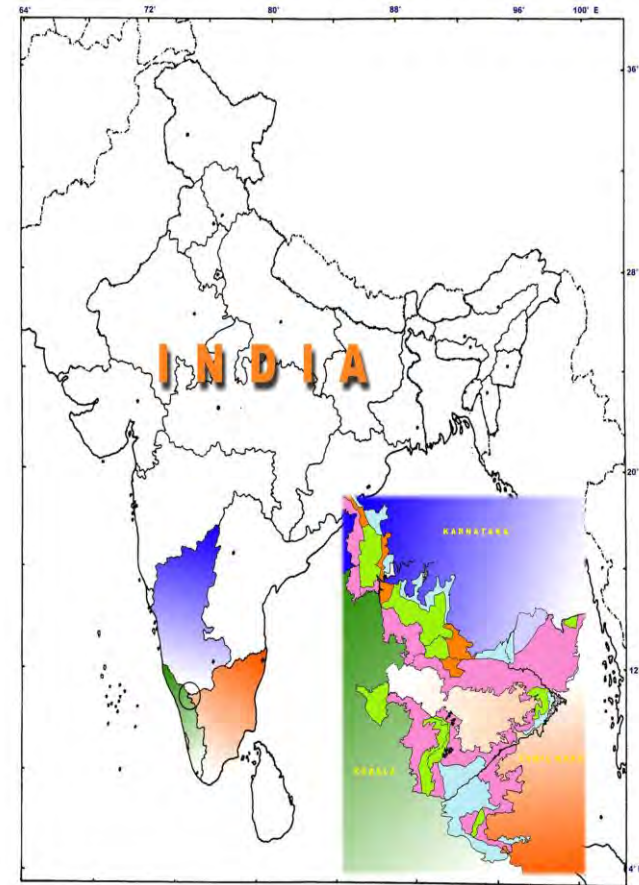
Great Nicobar Biosphere Reserves(Aerial view)

The ongoing activities in one of the sites: Gulf of Kachchh

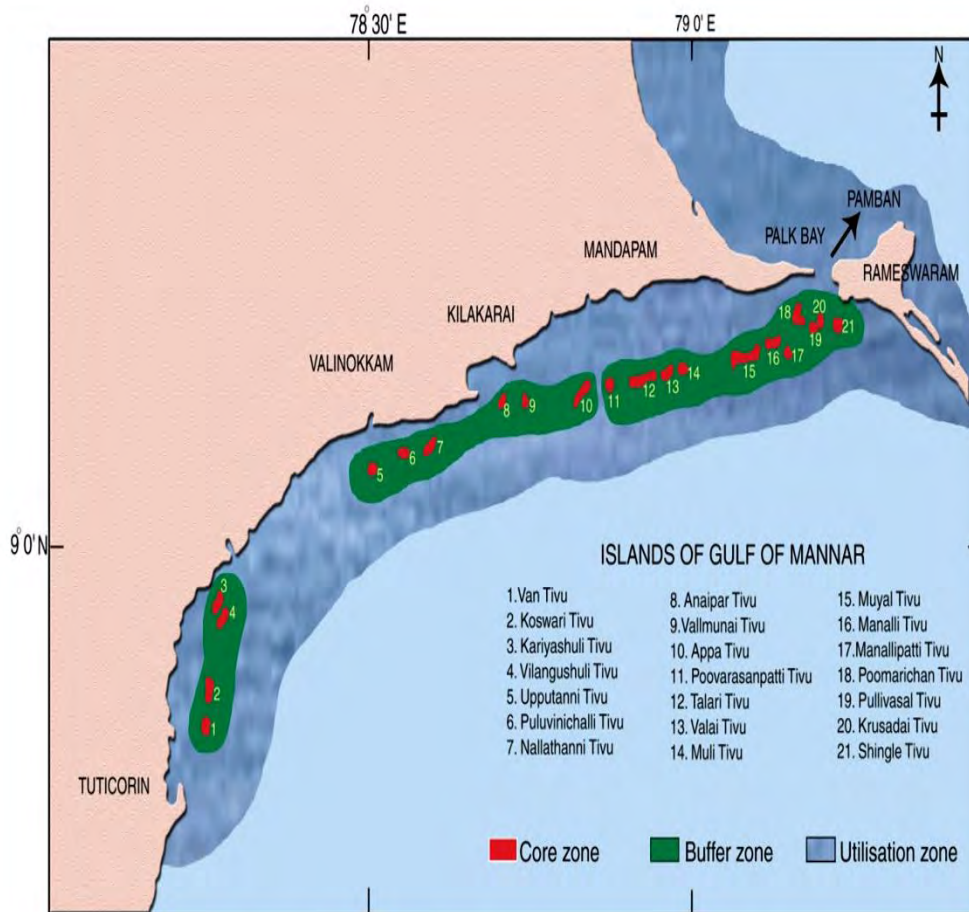
- An oceanarium to be established at Dwaraka in the Gulf of Kachchh Marine National Park with private participation
- It is for research on the behaviour of marine animals by GEER foundation through finance aids.
- By this activity, one lakh population living at Dwarka benefited with increased of tourism. It is expected that a threefold of increase in tourism (estimated 3 lakh increase in tourists per annum) and extensive revenue generation.
- Under the livelihood improvement activities of Gujarat Ecology Commission (GEC) in non-forest villages of the coast, livelihood development through capacity development have been conducted.
- As entry level activities, 500 ha fuel woodland, 20 rain-water harvesting structures, 35 ground water recharging activities are being be carried out. About 10,000 (20-25 persons/ SHG) people from 90 villages of Kachchh and Rajkot districts have been benefited.
- Short-term livelihood have been generated for vulnerable groups like Maldharis, fishermen, livestock owners, marginal farmers, agricultural labourers and women in selected villages.

Nilgiri BR

- ❖ Global biodiversity hotspot located in the tri junction of the States of Karnataka, Kerala and Tamil Nadu.
- ❖ Assistance extended for the activities which include recharging of the groundwater, replenishment of the surface water to meet the needs of local people as well as wildlife fauna and thereby reducing human-animal conflicts.



Gulf of Mannar BR- Zonation



GULF OF MANNAR BIOSPHERE RESERVE: ISLANDS AND ZONATION

- ❖ Consists of 21 Islands – size ranges from 0.25 to 129 ha
- ❖ The Islands formed core zone and divided into three groups namely Mandapam, Keelakarai and Tuticorin
- ❖ Buffer zone formed 10 km width from shore line in marine environment.

Gulf of Mannar BR

- This marine BR with 21 coral islands as terrestrial core zone with *Dugong dugon* (Sea cow) a flagship species & endangered marine herbivorous mammal, is extended in the India part of Gulf of Mannar.
- Assistance has been provided for Greening public and private lands such as Schools, Colleges, community lands, road- avenues etc. - which is a source of additional income generating activity, construction of water harvesting structures in community lands/forest lands , habitat improvement activities.

Sunderban BR

- With largest mangrove forests, it is inhabited by the Great Bengal Tiger Reserve.
- Sunderban national park is inscribed on the World Heritage List of UNESCO.
- Financial assistance extended for raising non-mangrove plantation, developing infrastructure for local committees such as jetties, crafts, solar lights, rainwater harvesting structures etc. To minimize the conflict between human and wildlife etc.

Nanda Devi BR

- ❖ The Nanda Devi BR in Northern part of West Himalaya has the wide altitudinal range.
- ❖ The inhabitants of NDBR belong to the Indo-Mongoloid (Bhotia) and Indo Aryan groups.
- ❖ They have unique culture and tribal customs and most of them practice Hinduism.
- ❖ The Nanda Devi national park is the World Heritage site signified by the Nanda Devi peak a natural monument and India's second highest peak.
- ❖ Sacred sites and religious places abound in the NDBR where deities reside in forests, meadows, rivers, lakes and mountains.

Nanda Devi BR

- It is a unique combination of mountain ecosystems including traditional agro-ecosystems, alpine forests, meadows and glaciers located in Northern part of the West Himalaya.
- Nanda Devi and valley of Flowers National Parks in this BR is inscribed on the World Heritage List of UNESCO.
- Financial assistance extended for maintenance of flower nursery, habitat management, improved forest management, promotion of value addition activities like farming of fruit and vegetables crops, animal husbandry, poultry, bee keeping, provision of solar lights, ecotourism etc, with involvement of local communities.

NOKREK BIOSPHERE RESERVE: LOCATION



Nokrek BR

- Located in the North-Western part of Meghalaya, it is an adobe of rich flora, fauna and natural beauties which attracts the researchers, scientists.
- Assistance extended for construction of minor irrigation structures for water supply to the paddy fields, creation of decentralized horticultural/cash crop nursery as alternative source of livelihood, promotion of brown revolution, promotion of mushroom cultivation as income generation to Jhumia community, popularization of energy alternatives; and educational material for raising awareness on conservation and sustainable development.

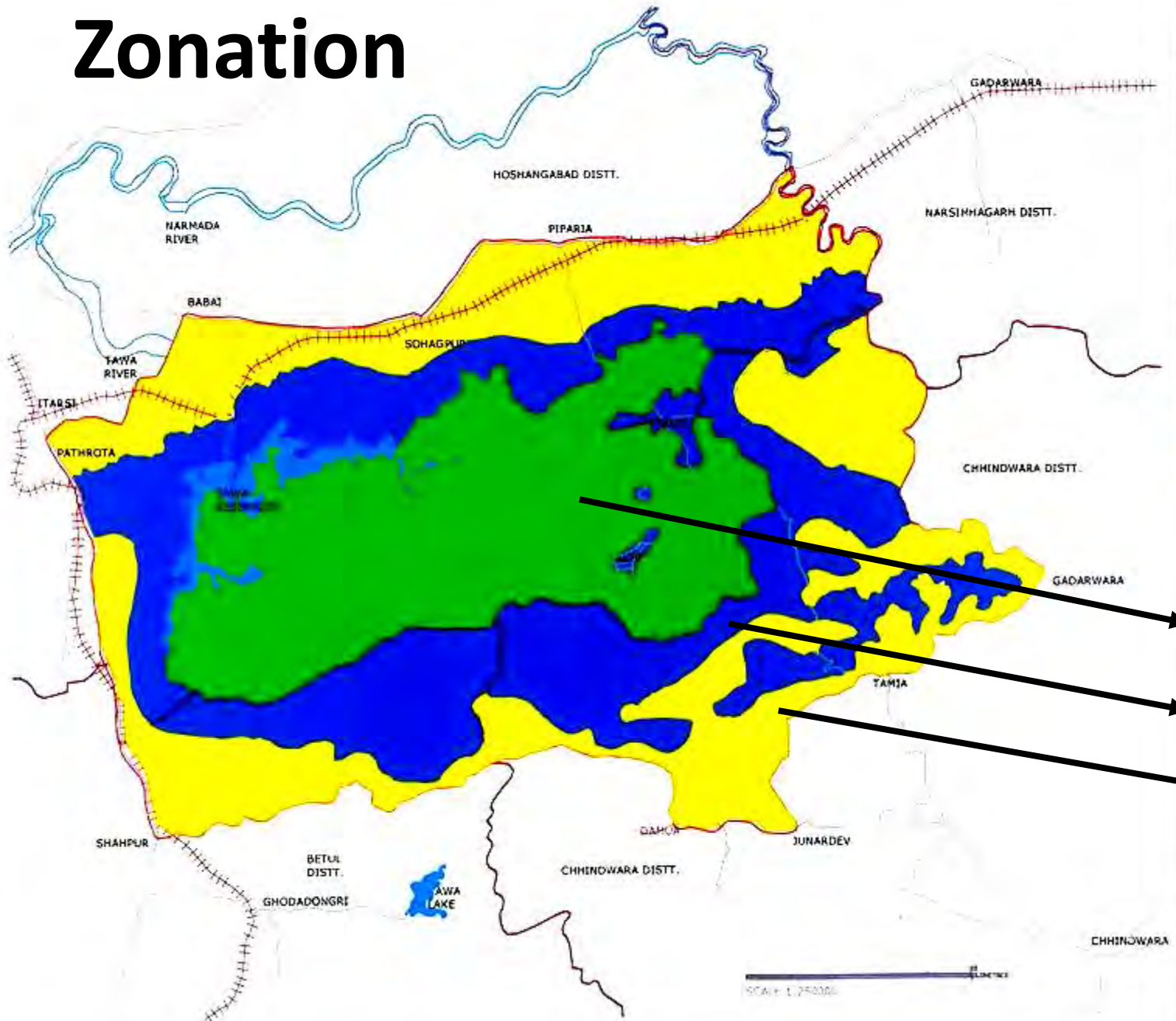
SIMILIPAL BR

HIMALAYA OF EAST

Similipal BR

- Located in the Mayurbhanj district of Odisha, this BR is predominantly a tribal landscape with heavy dependence on forest resources for their livelihood.
- Financial assistance has been extended for activities which include water harvesting structures, creation of artificial ponds, tube wells, dug wells, development of roads, nurseries, biogas plants, pisciculture, apiculture, mushroom culture, poultry, animal husbandry for improvement of livelihood for local communities.

Zonation



PACHMARHI BIOSPHERE RESERVE

MAP- 4

ZONATION OF AREA

LEGEND

- ROAD
- DISTRICT BOUNDARY
- RAILWAY LINE
- PBR BOUNDARY
- WATER BODY
- CORE AREA
- BUFFER ZONE
- RESTORATION ZONE

1555.23 sq km

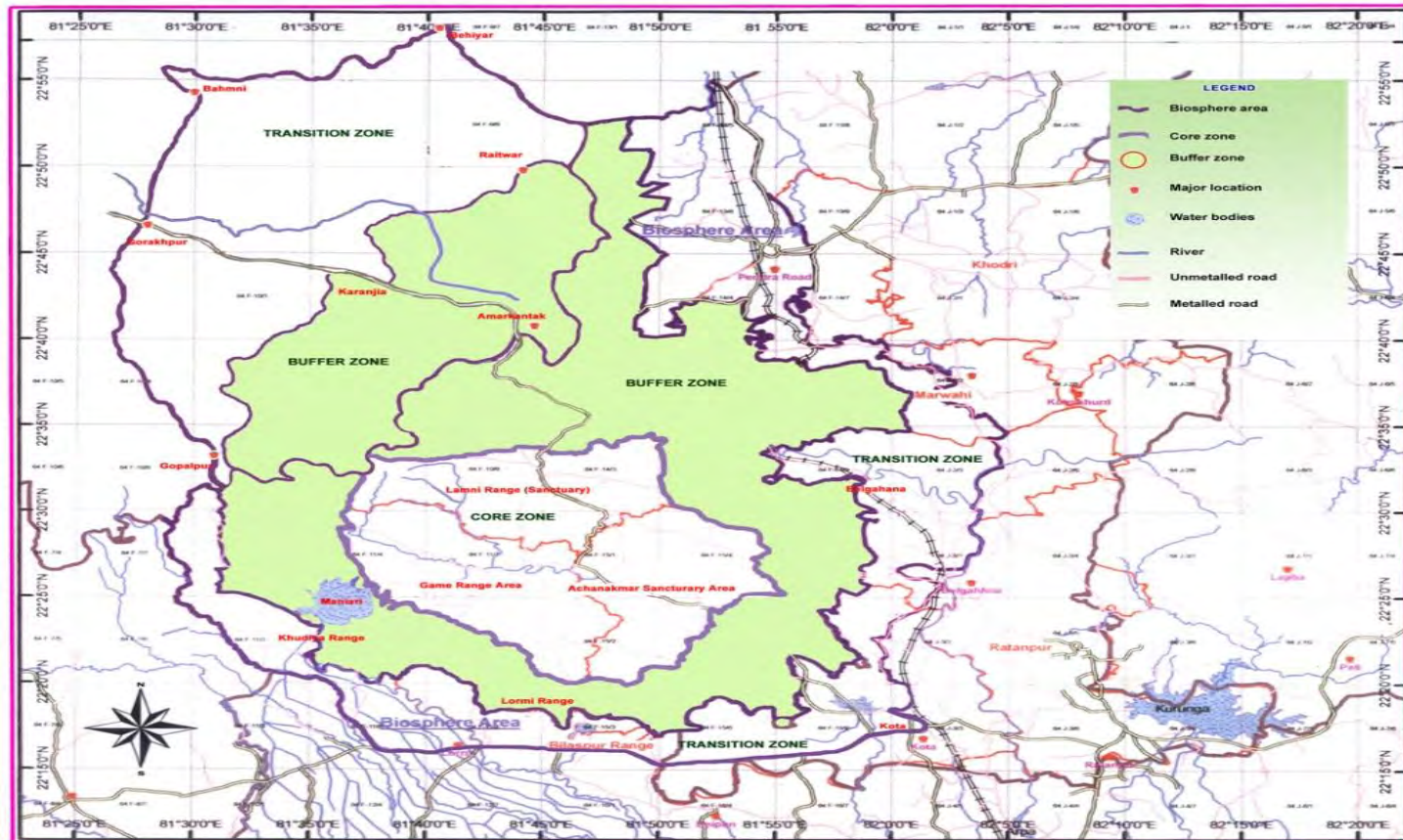
1785.58 sq. km

1640.91 sq.km

4981.72 sq.km

ENVIRONMENTAL PLANNING
COORDINATION ORGANIZATION

Achanakmar-Amarkantak BR



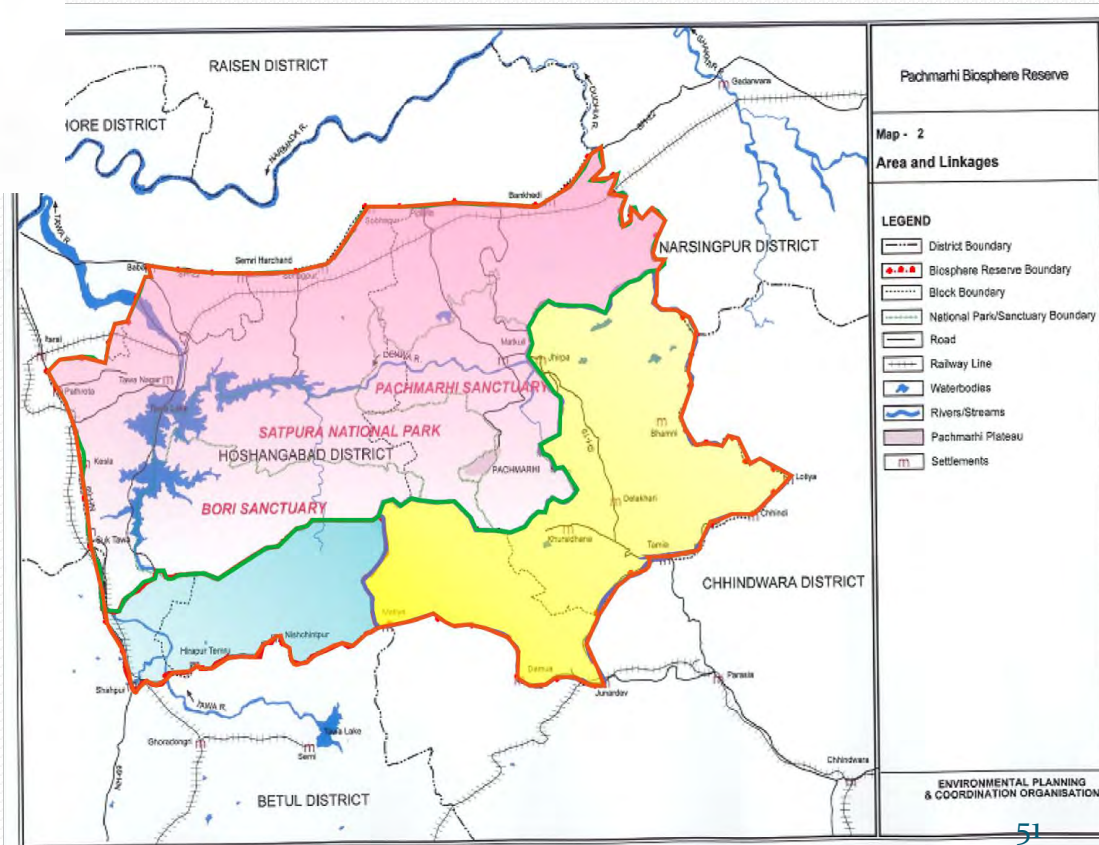
Achanakmar-Amarkantak BR

- This BR spreads from Maikal Hill ranges to the junction of Vindhyan and Satpura hill ranges spread in adjoining parts of Chattisgarh and Madhya Pradesh.
- Assistance provided include, *in-situ* plant conservation, habitat improvement by recharging the ground water with construction of ponds, restoration of degraded forest areas, micro and macro irrigation works for socio-economic upliftment.

Pachmarhi BR

Map - 1

General Location of PBR

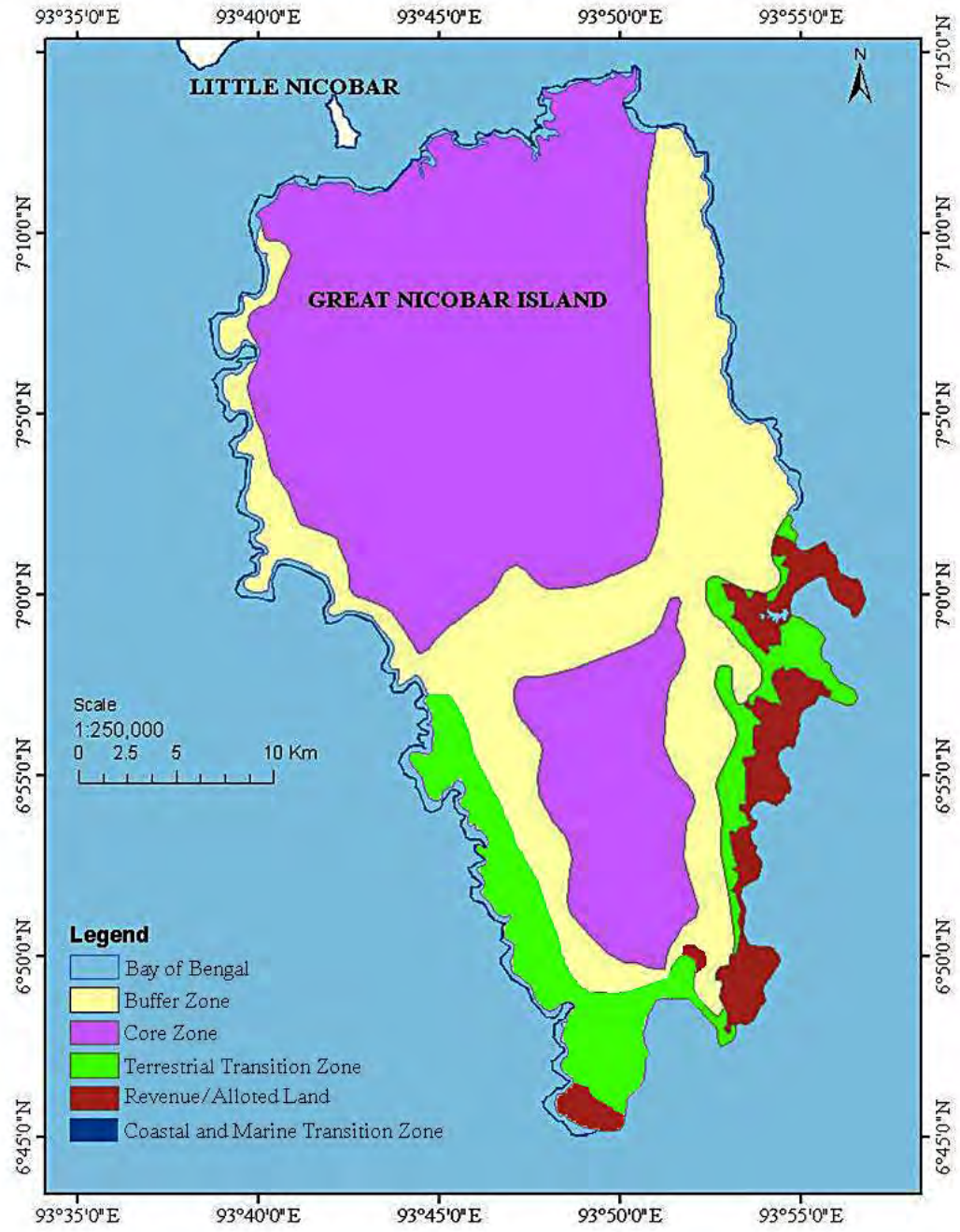


Pachmarhi BR

- It is a hill station in Madhya Pradesh surrounded by Satpura National Park, Pachmarhi and Bori Sanctuaries was provided financial assistance for sustenance of the local communities for improving farming methods, minimizing use of pesticides, promotion of animal husbandry, water and land management, providing smokeless chulhas (Stoves) for households of the local communities etc.

Great

GREAT NICOBAR BIOSPHERE RESERVE



Great Nicobar BR

The inhabitants of the BR particularly the tribes are culturally, socially and emotionally attached to the area including dwindling population of Nicobarese and Shompen tribes of about 300 and 200-25 respectively in coastal Villages and interior forests respectively.

Conservation programmes will not only check the depletion of the resource base but also improve the living conditions of the tribes.

Assistance given to generate additional income such as popularisation of energy alternatives, forest management, habitat improvement, animal husbandry, apiculture, development of crafts, education, health and immunization etc. In addition, a host of forest areas within the Biosphere Reserve offers ideal locations for development and practice of eco-tourism.

Other Biosphere Reserves

- Agasthyamalai, Part Kerala and Tamilnadu
- Cold Desert, Himachal Pradesh
- Dehang-Dibang, Arunachal Pradesh
- Dibru-Saikhowa, Assam
- Kachchh, Gujarat
- Khangchendzonga, Sikkim
- Manas, Assam
- Panna, Madhya Pradesh
- Seshachalam, Andhra Pradesh

Future Initiatives under the BR Scheme to Promote Livelihood Security

- To identify more BRs in various parts of the country with special emphasis on local community development.
- To identify Lead Institutions which are reputed scientific organizations which will assist the BRs for preparation, implementation and undertake research for each of the BRs.
- To increase financial assistance to the on-going BRs and also for the new BRs.
- To promote information exchange with not only the BRs within the country but also learn from experiences from other countries.

Links

- www.moef.nic.in
- <http://moef.nic.in/division/biosphere-reserves>
- <http://www.moef.nic.in/sites/default/files/cs-040412.pdf>
- [http://www.moef.nic.in/sites/default/files/BR Guidelines.pdf](http://www.moef.nic.in/sites/default/files/BR_Guidelines.pdf)